INSTRUCTIONS

M D D

MULTI DISPLAY DEVICE

JEOL

No. ISMMDD - 1

JEOL LTD. / JEOL TECHNICS LTD.

Tokyo Japan

8209001TP

CAUTION

Operation etc. for T330-MID is identical to that for MDD .
Refer to the MDD instruction manual and following notes.
MID is nearly equal that MDD and IMS are conbined.
MID allows dual image observation with 2NDCRT.

2 SPECIFICATIONS

- Display modes: NOR(1 image on 1 CRT),
  SPLIT(2 images on 1 CRT),
  DUAL(2 images;1 image on each CRT)
- Selector switches: Seven pushbuttons, 2 systems.

5 PANEL DESCRIPTION

- SEI ; Secondary electron image
- BEI(TOPO) ; Backscattered electron topographic image(BEIS2)
- BEI(COMP) ; Backscattered electron composition image(BEIS2)
- X-RAY ; X-ray image(EDS,BCX are required.)
- CLD ; Cathodoluminescence image(CLD/CLDIR)
- TED ; Transmitted electron image(LG3TED)
- EMF ; Electromotive force image

6 OPERATION

- For X-RAY image display, BCX MAIN is set to ON and select X-RAY.
- CLD/TED : Adjust image contrast with PSD.
- Select left image by left selector switches, right image by right switches.
- TV mode cannot be used in SPLIT mode. No image is displayed on 2NDCRT.
- 2NDCRT is required for DUAL mode, then each image is displayed on each CRT.
- Photographing in DUAL mode, "image on Left side CRT" is exposed.
- For BCX POSITION mode, set to NOR mode and select the selector to image other than X-RAY.

7 CABLE CONNECTION

Connection is changed.

8 SIMULTANEOUS USE OF OTHER ATTACHMENTS

- Cannot be installed simultaneously with IMS.
- Following attachemnts are required IMS or MID.
  BEIS2,CLD/CLDIR,EMF,LG3TED
- The BCX is required for X-RAY image display.
- 2NDCRT is required MID.

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1986)

1 GENERAL

MDD allows to display a dual image on the CRT. This device is useful for observation and analysis by comparing the dual image.

2 SPECIFICATIONS

- Display mode:
  - MDD ON: Dual image
  - MDD OFF: Single image
- Input signal: One of 6 signals(left side image displayed on CRT)
- Scan speed: Slow scan ;1/2 of standard scanning microscope

3 COMPOSITION

- MDD unit 1

Note: PSD(Power supply for detector) is required for CLD/TED detector.

4 PRINCIPLE

Detected signals from 2 detectors are selected by IMS and MDD, and display as right side and left side images on CRT.

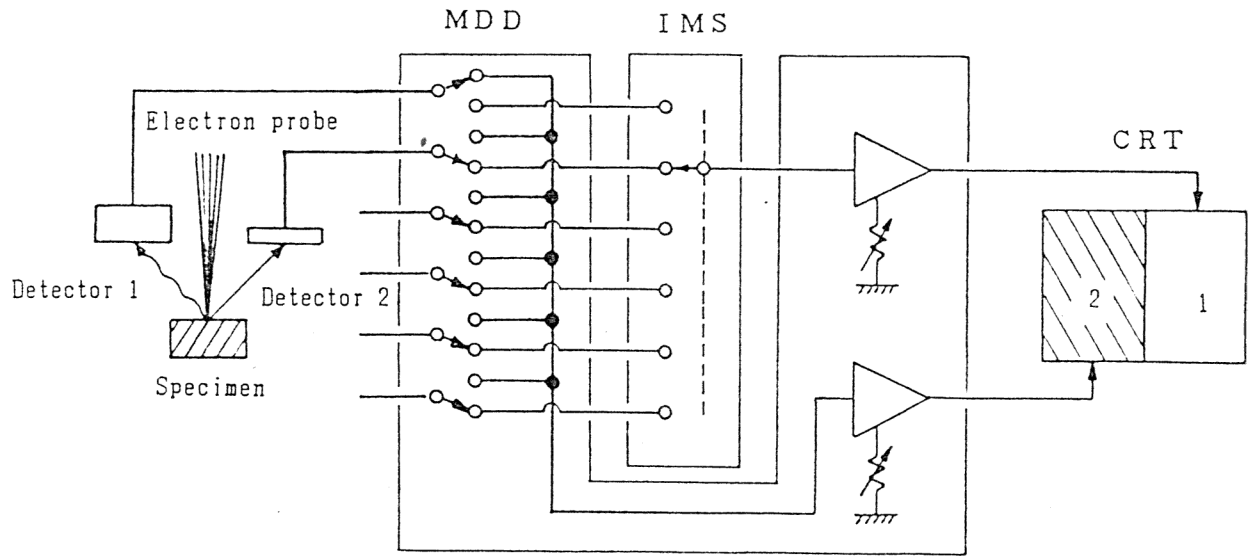
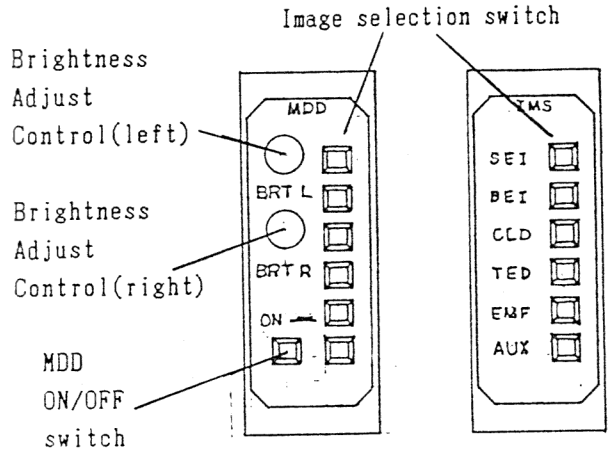


Fig. 1

5 PANEL DESCRIPTION



S E I : Secondary electron image
B E I : Backscattered electron image
C L D : Cathodoluminescence image
T E D : Transmitted electron image
E M F : Electromotive force image
A U X : Auxiliary

M D D I M S

Note: MDD should be installed at left side of IMS.

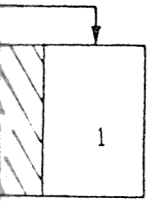
Fig. 2

6 OPERATION

1) Depress MDD ON/OFF switch to ON.
   Note: TV mode cannot be available.
2) Select images by image selection switches.
   • Right: By IMS.
   • Left: By MDD.
   Note: Same image cannot be selected by IMS and MDD.
3) Adjust brightness of each side image.
4) Photography is according to scanning microscope instructions.
   Note: Rapid exposure marker cannot be used.

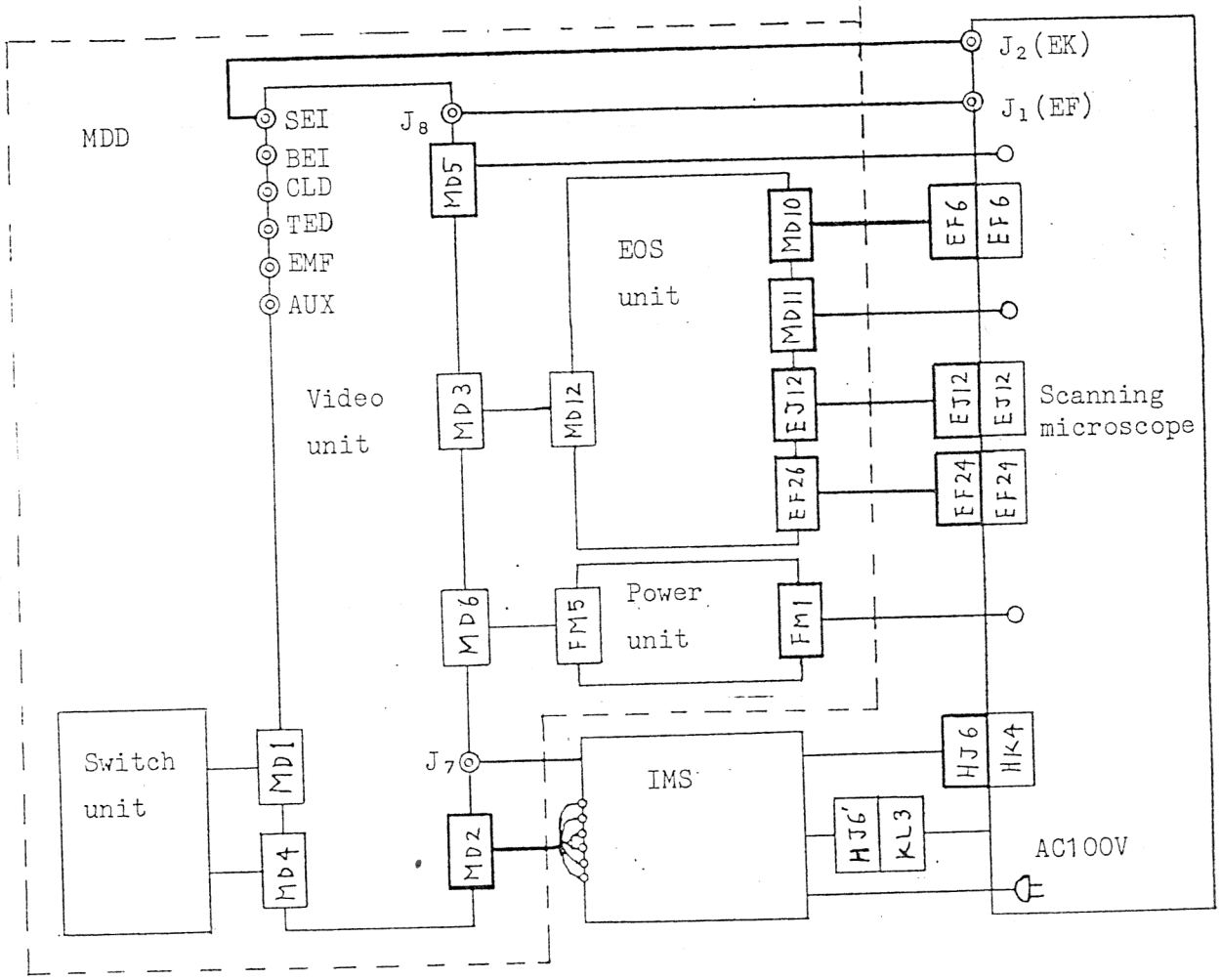
Notes: 1 Dual(low/high) magnification display cannot be available with IZD.
2 Detector is required for BEI,CLD etc. obsarvation.
3 Simultaneous use with BCX.
a) Turn brightness adjust control to counterclockwise for X-ray image.
b) Spot position mode cannot be used.
4 Other attachments descrived above are refer to section "8 SIMULTANEOUS USE OF OTHER ATTACHMENTS".

CRT

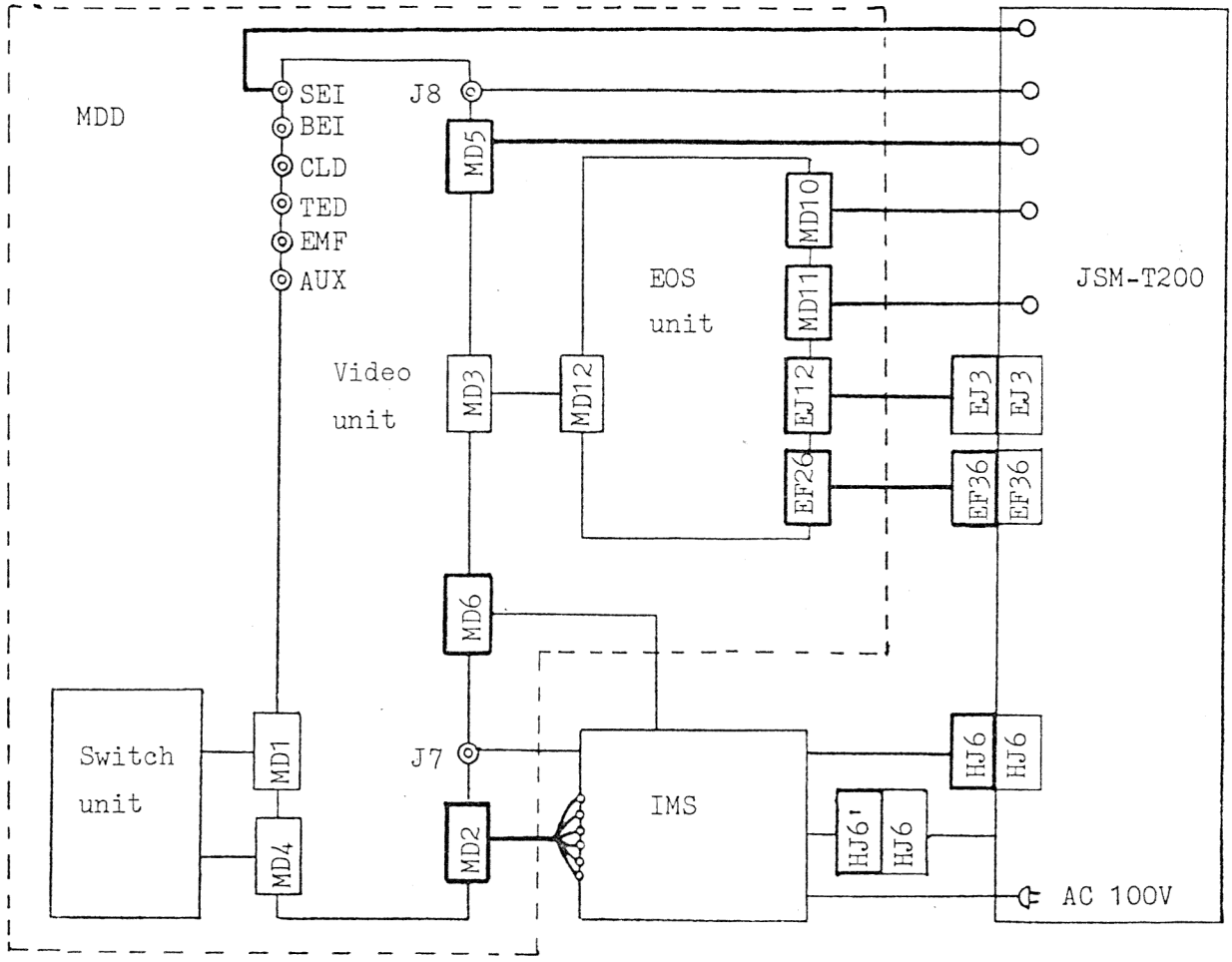


7 INTERCONNECTION DIAGRAM

a) T300

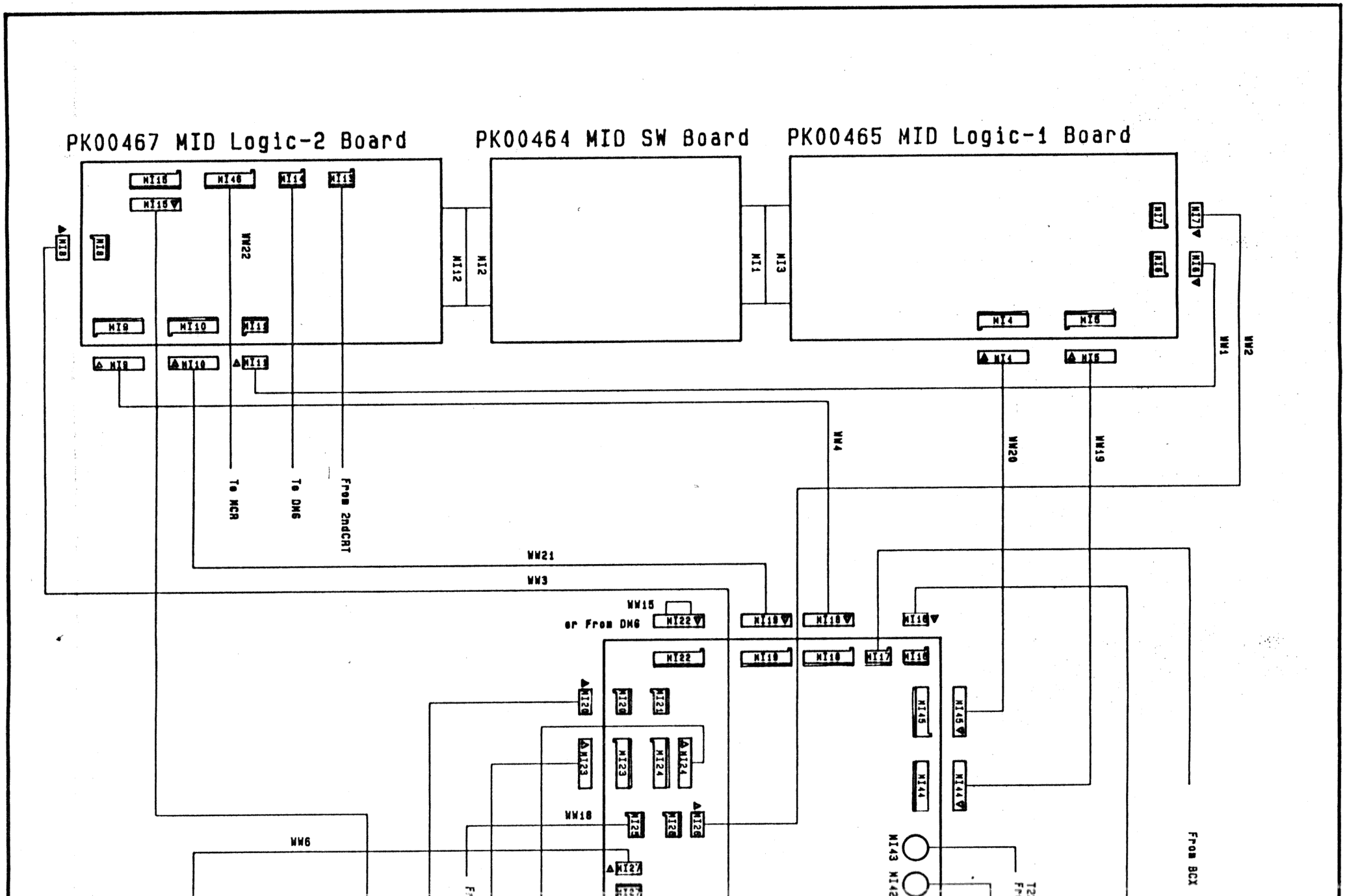


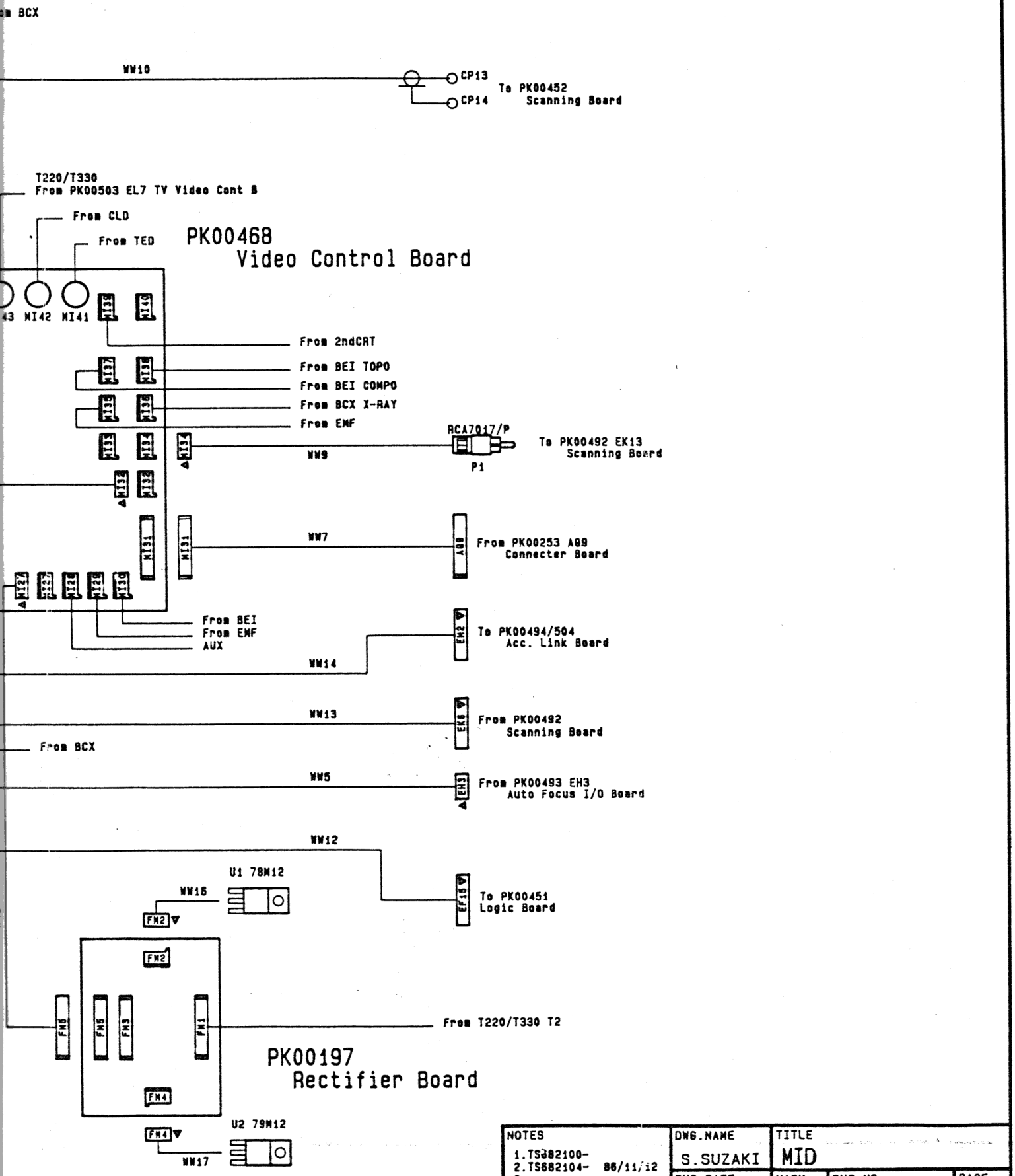
b) T200



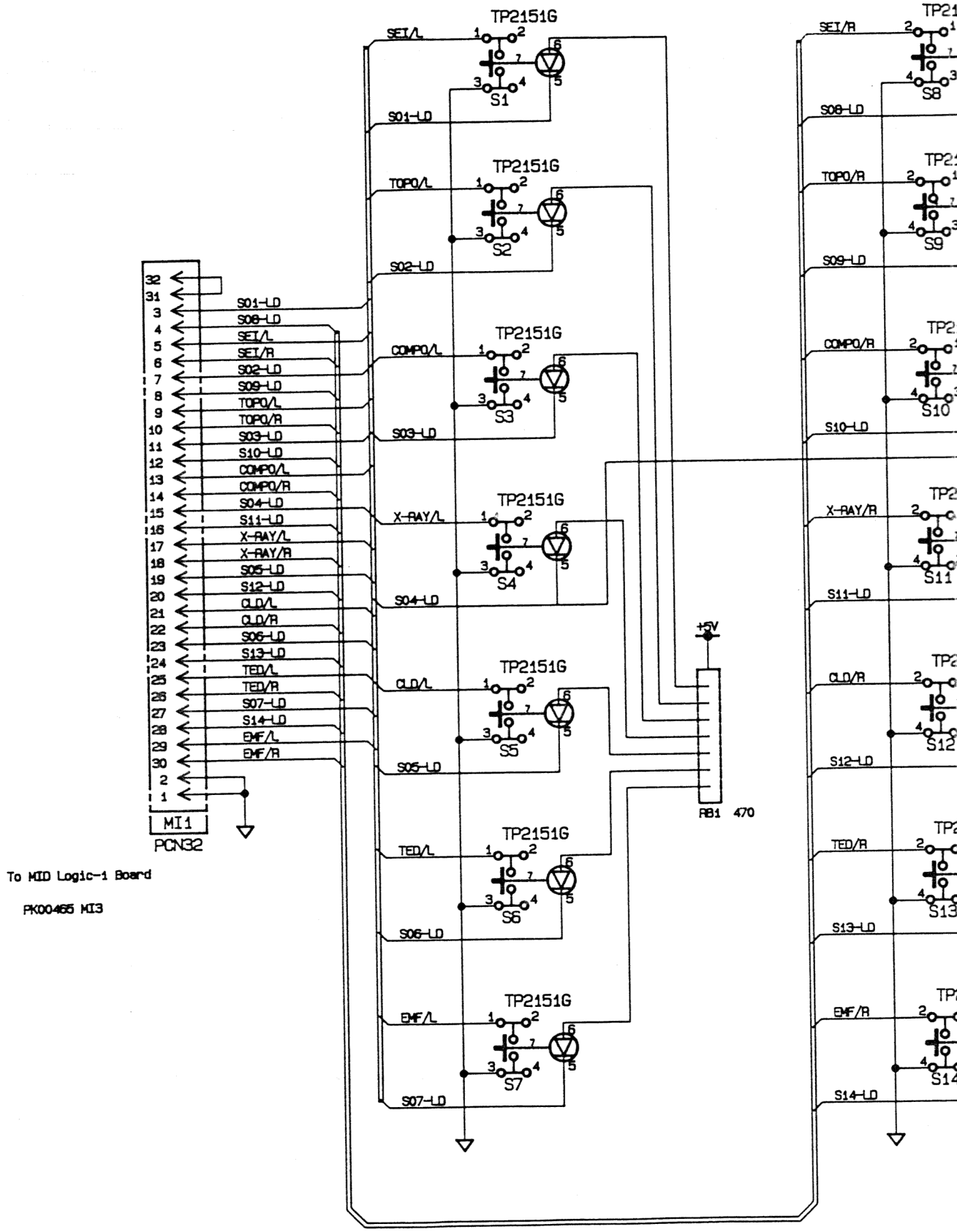
8 SIMULTANEOUS USE OF OTHER ATTACHMENTS

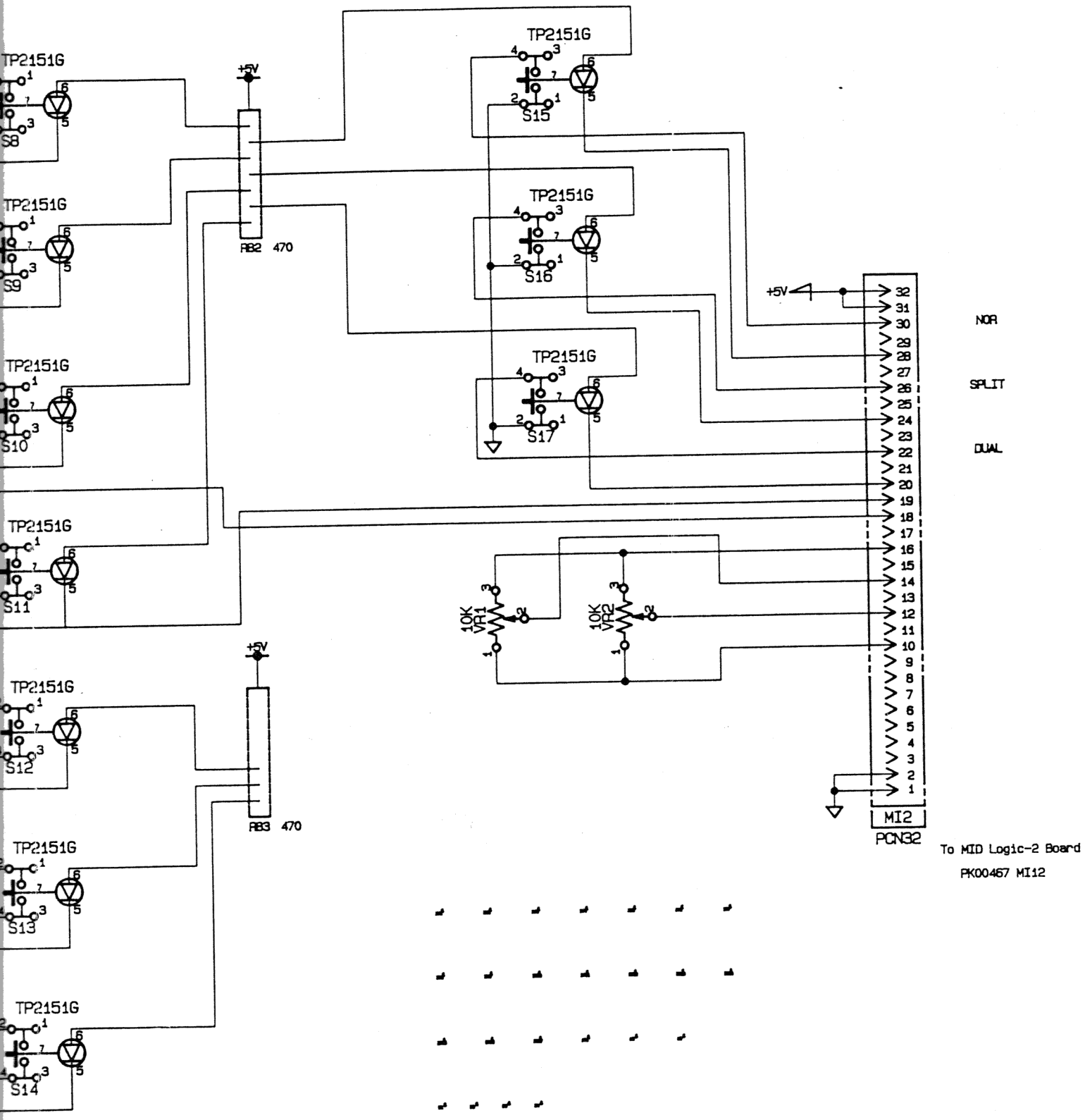
- IMS is required simultaneously with MDD.
- Detector for BEIS,CLD,TED,EMF etc. is required.
- For the CLD and TED, PSD is required simultaneously.
- RRD,MCR,IZD(low mag. mode),CD32 cannot be used simultaneously with MDD.


PK00467 MID Logic-2 Board
PK00464 MID SW Board
PK00465 MID Logic-1 Board
MI16
MI46
MI17
MI15
MI18
MI8
MI9
MI10
MI11
MI12
MI2
MI1
MI3
MI7
MI6
MI4
MI5
WW22
WW1
WW2
WW4
WW20
WW19
WW21
WW3
To MCR
To DMG
From 2ndCRT
WW15
or From DMG
MI22
MI19
MI17
MI16
MI20
MI21
MI23
MI24
MI25
MI26
MI27
MI28
MI45
MI44
MI43
MI42
WW18
WW6
From BCX

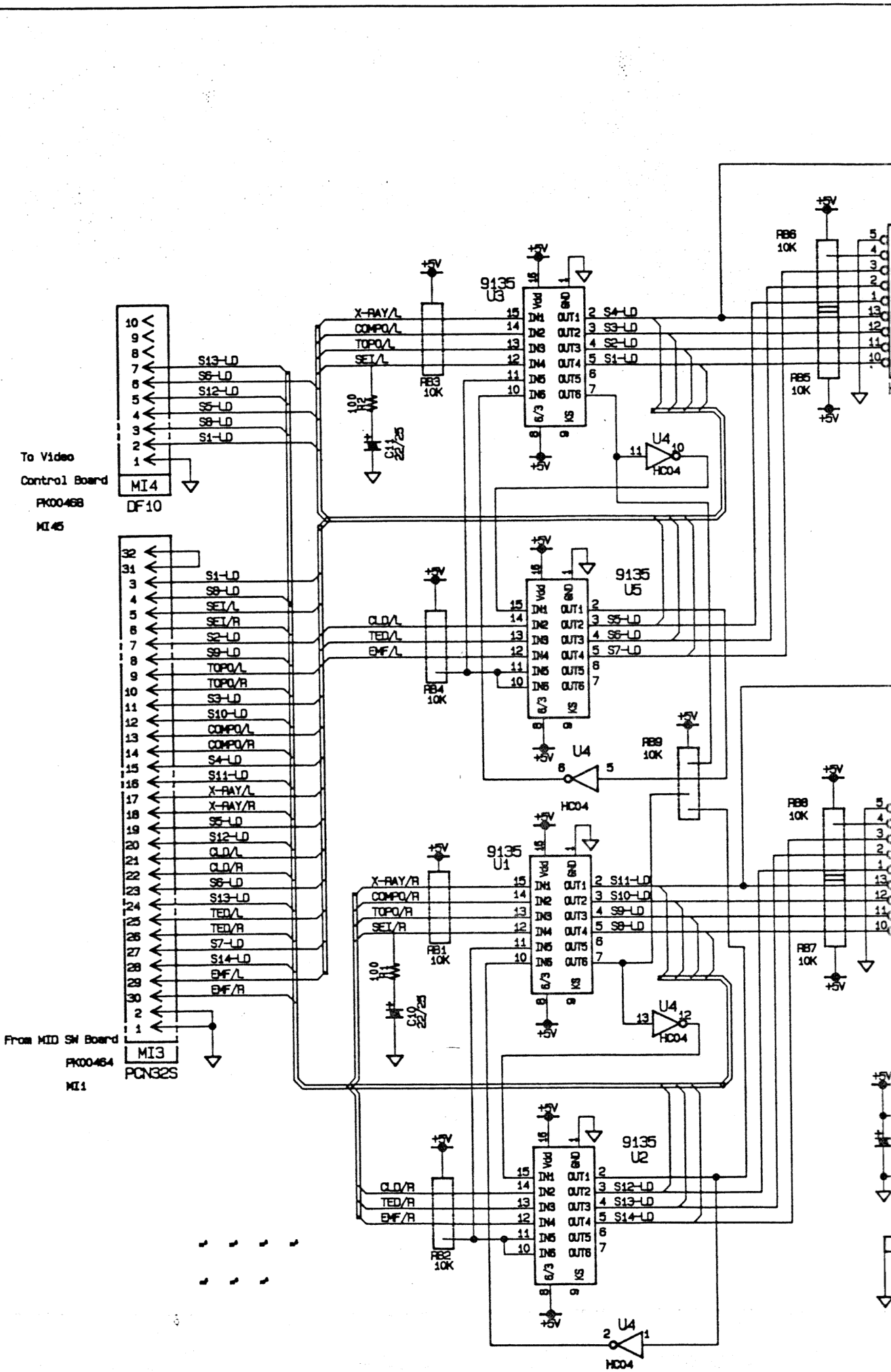


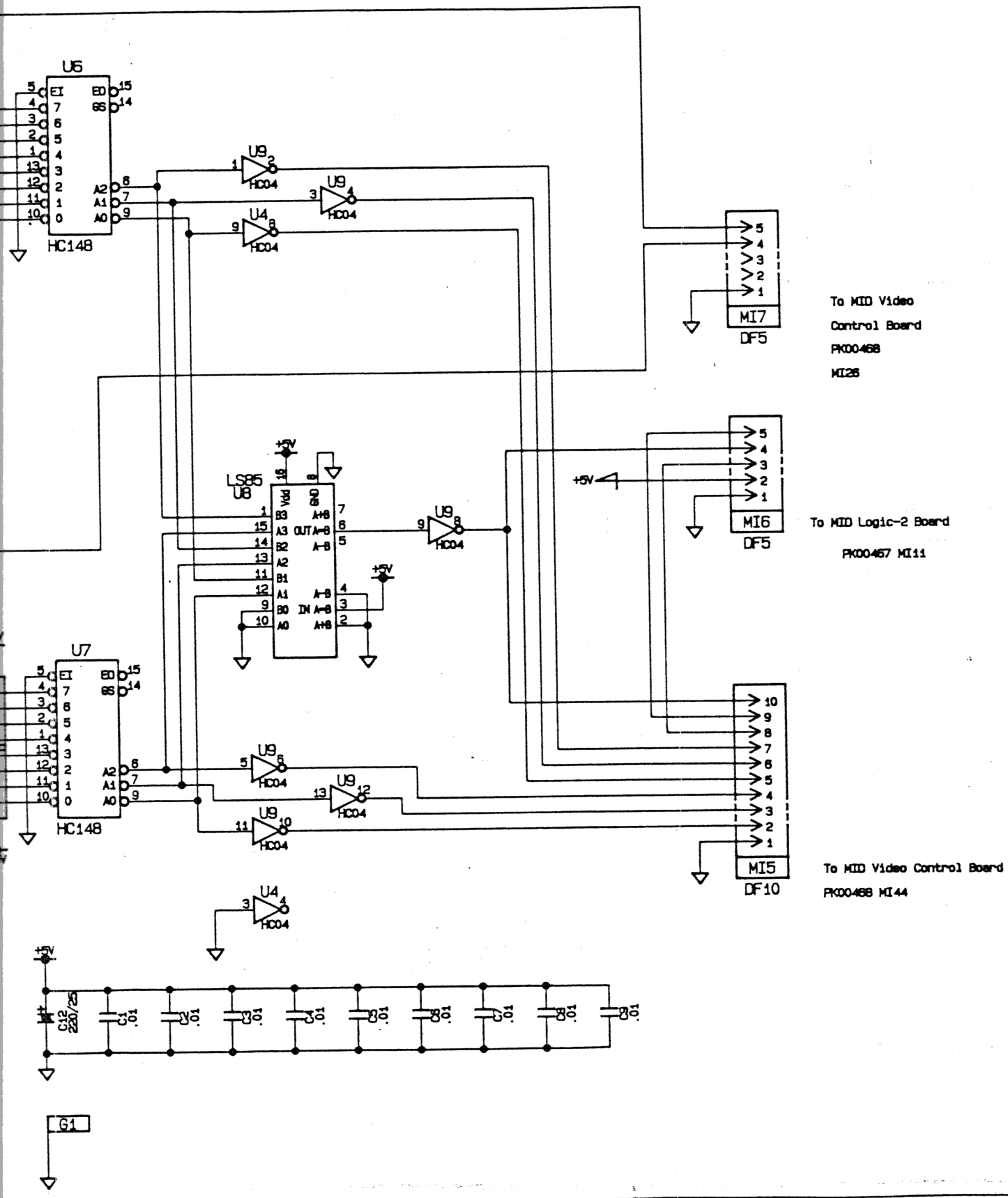
NOTES	DWG.NAME	TITLE			
1.TS382100- 2.TS682104- 86/11/12 3 4 5	S.SUZAKI	MID			
	DWG.DATE	MARK	DWG.NO		PAGE
	86/06/03	MI	PK00463		1/1


TP2151G
S1
S2
S3
S4
S5
S6
S7
S8
S9
S10
S11
S12
S13
S14
SEI/L
SEI/R
S01-LD
S08-LD
TOPO/L
TOPO/R
S02-LD
S09-LD
COMPO/L
COMPO/R
S03-LD
S10-LD
X-RAY/L
X-RAY/R
S04-LD
S11-LD
CLD/L
CLD/R
S05-LD
S12-LD
TED/L
TED/R
S06-LD
S13-LD
EMF/L
EMF/R
S07-LD
S14-LD
+5V
RB1 470
MI1
PCN32
To MID Logic-1 Board
PK00465 MI3



DRAWING S.SUZAKI	TITLE SW Board		
DATE 86/06/06	MARK MID	DWG.NO. PK00464	1/1


To Video
Control Board
PK00468
MI45
MI4
DF10
From MID SW Board
PK00464
MI1
MI3
PCN32S
9135
U3
U5
U1
U2
U4
HC04
RB1
RB2
RB3
RB4
RB5
RB6
RB7
RB8
RB9
10K
X-RAY/L
COMPO/L
TOPO/L
SEI/L
CLD/L
TED/L
EMF/L
X-RAY/R
COMPO/R
TOPO/R
SEI/R
CLD/R
TED/R
EMF/R
S1-LD
S2-LD
S3-LD
S4-LD
S5-LD
S6-LD
S7-LD
S8-LD
S9-LD
S10-LD
S11-LD
S12-LD
S13-LD
S14-LD
+5V
GND
Vdd



NOTES 1.TS682104- 86/11/12	DRAWING S.SUZAKI	TITLE Logic-1 Board	
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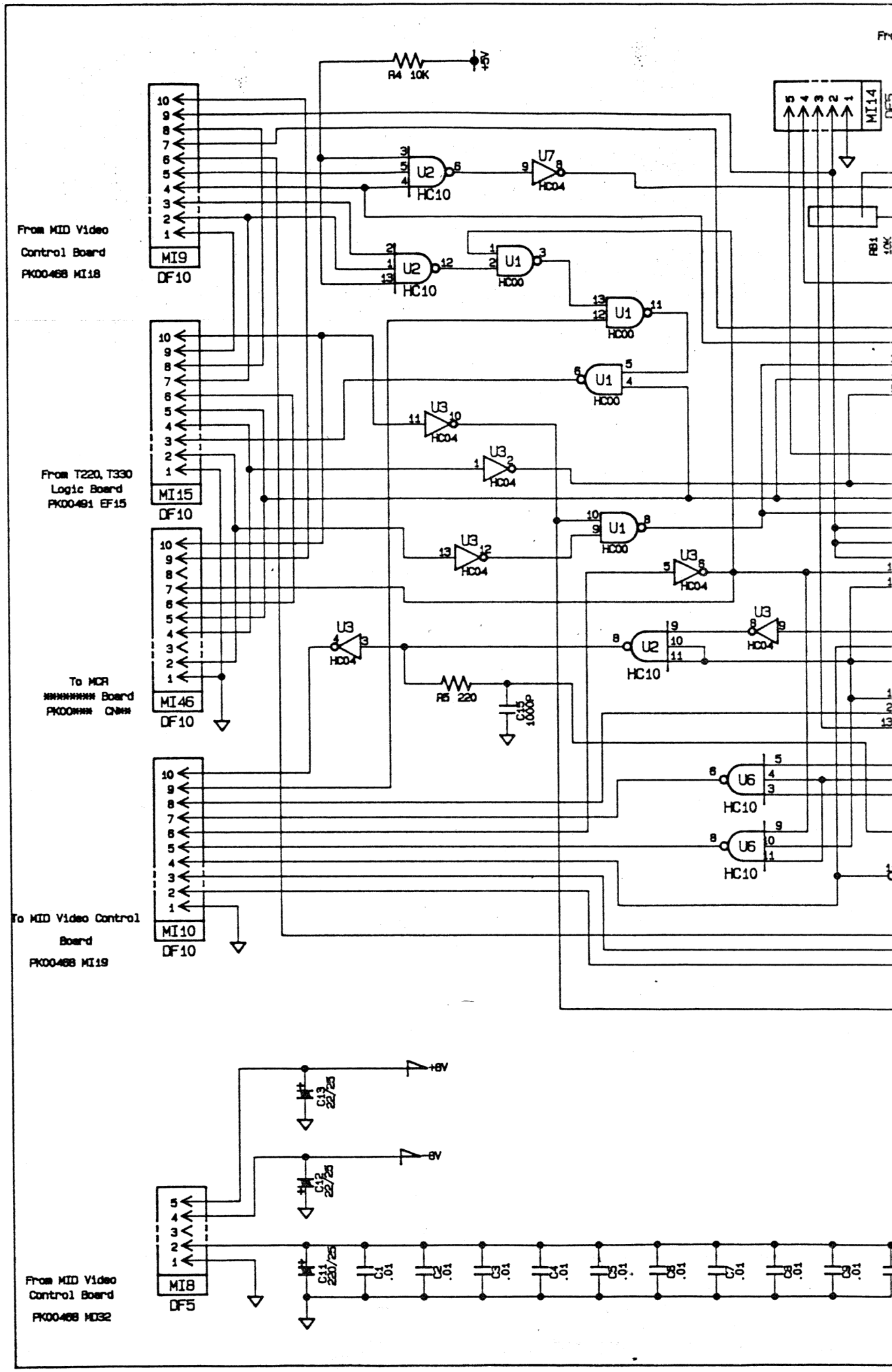
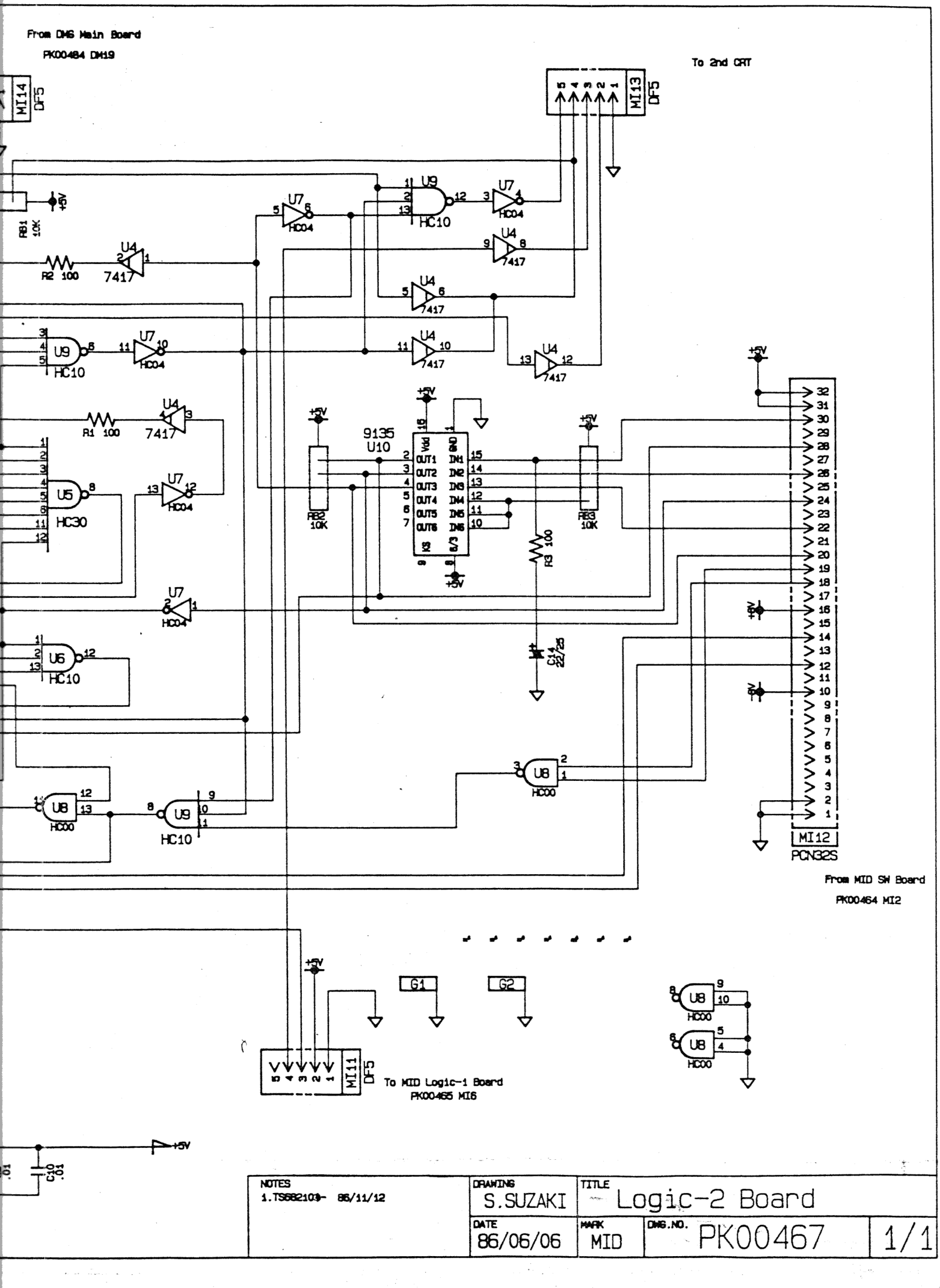

From MID Video Control Board PK00468 MI18
From T220, T330 Logic Board PK00491 EF15
To MCR ******** Board PK00**** CN**
To MID Video Control Board PK00468 MI19
From MID Video Control Board PK00468 MD32
MI9
MI15
MI46
MI10
MI8
MI14
DF10
DF5
R4 10K
R5 220
RB1 10K
U1
U2
U3
U5
U6
U7
HC00
HC04
HC10
+8V
C11 220/25
C12 22/25
C13 22/25
C15 1000P
C1 .01



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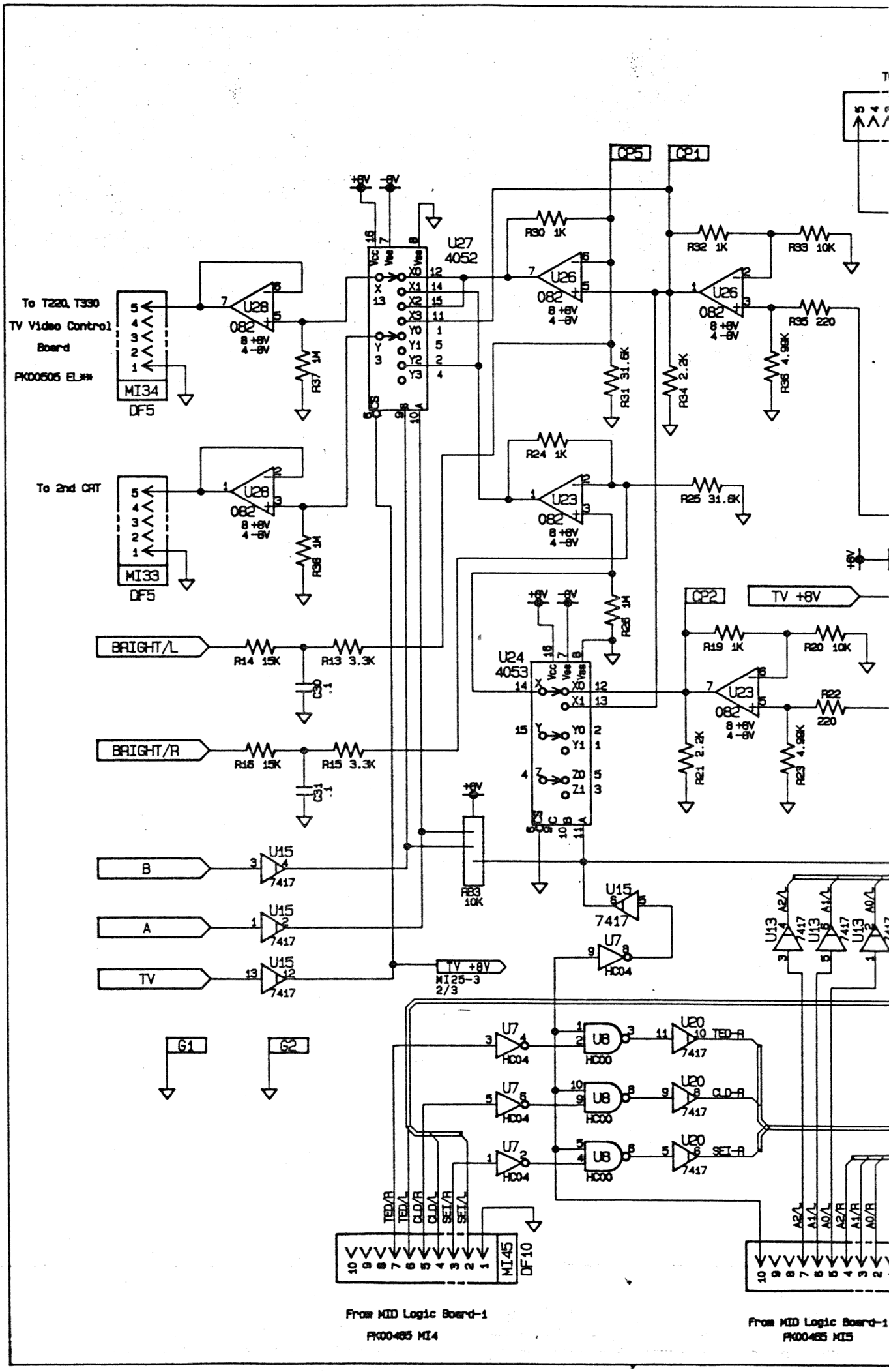
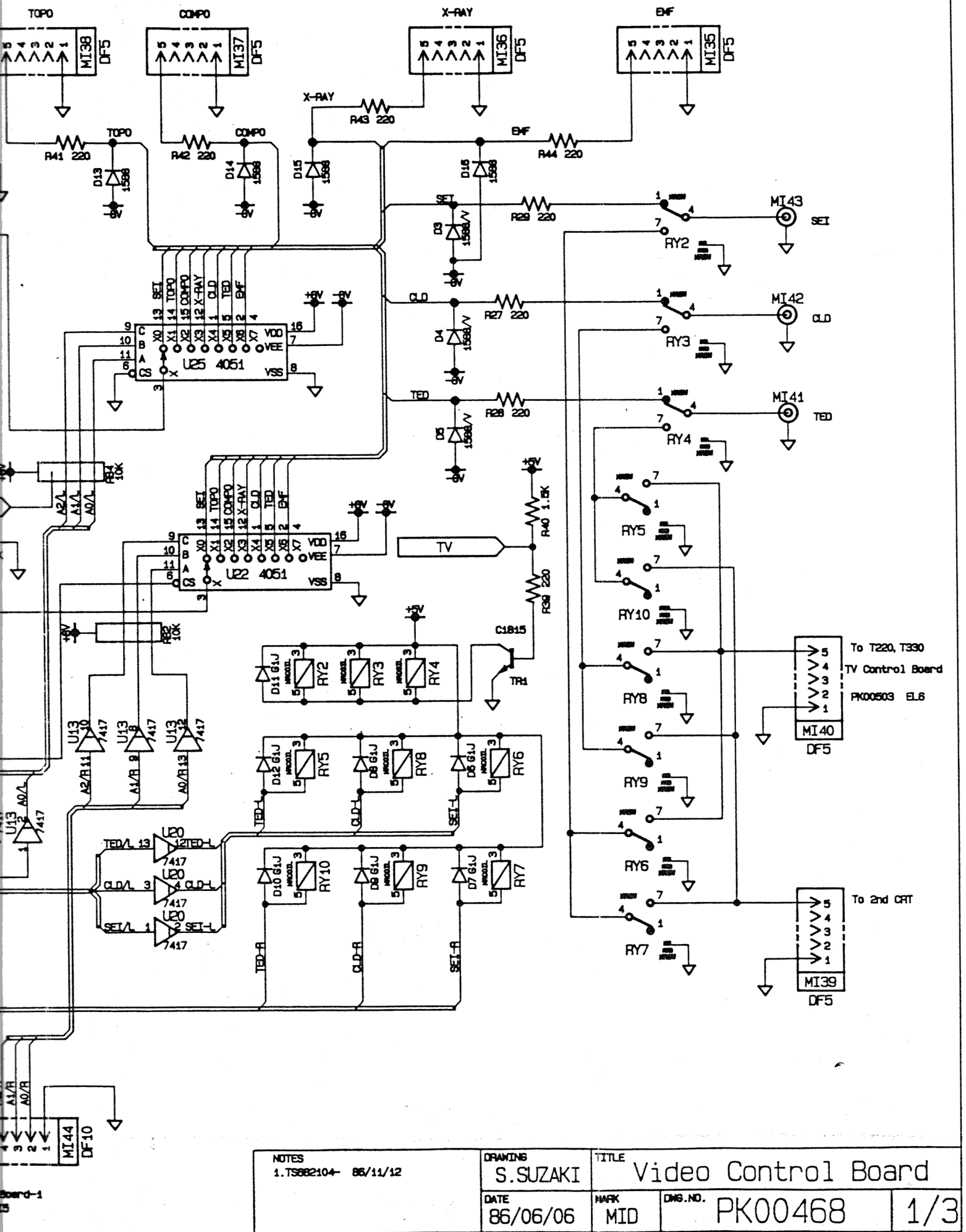

To T220, T330
TV Video Control
Board
PK00505 EL**
MI34
DF5
To 2nd CRT
MI33
DF5
U28
082
+8V
-8V
R37 1M
R36 1M
U27
4052
U26
R30 1K
R32 1K
R33 10K
R35 220
R31 31.6K
R34 2.2K
R36 4.99K
R24 1K
R25 31.6K
U23
R26 1M
CP5
CP1
CP2
TV +8V
R19 1K
R20 10K
R22 220
R21 2.2K
R23 4.99K
U24
4053
BRIGHT/L
R14 15K
R13 3.3K
C30 .1
BRIGHT/R
R16 15K
R15 3.3K
C31 .1
B
A
TV
U15
7417
R83 10K
TV +8V
MI25-3
2/3
G1
G2
U7
HC04
U8
HC00
U20
7417
TED-R
CLD-R
SEI-R
TED/R
TED/L
CLD/R
CLD/L
SEI/R
SEI/L
MI45
DF10
A2/L
A1/L
A0/L
A2/R
A1/R
A0/R
From MID Logic Board-1
PK00485 MI4
From MID Logic Board-1
PK00485 MI5



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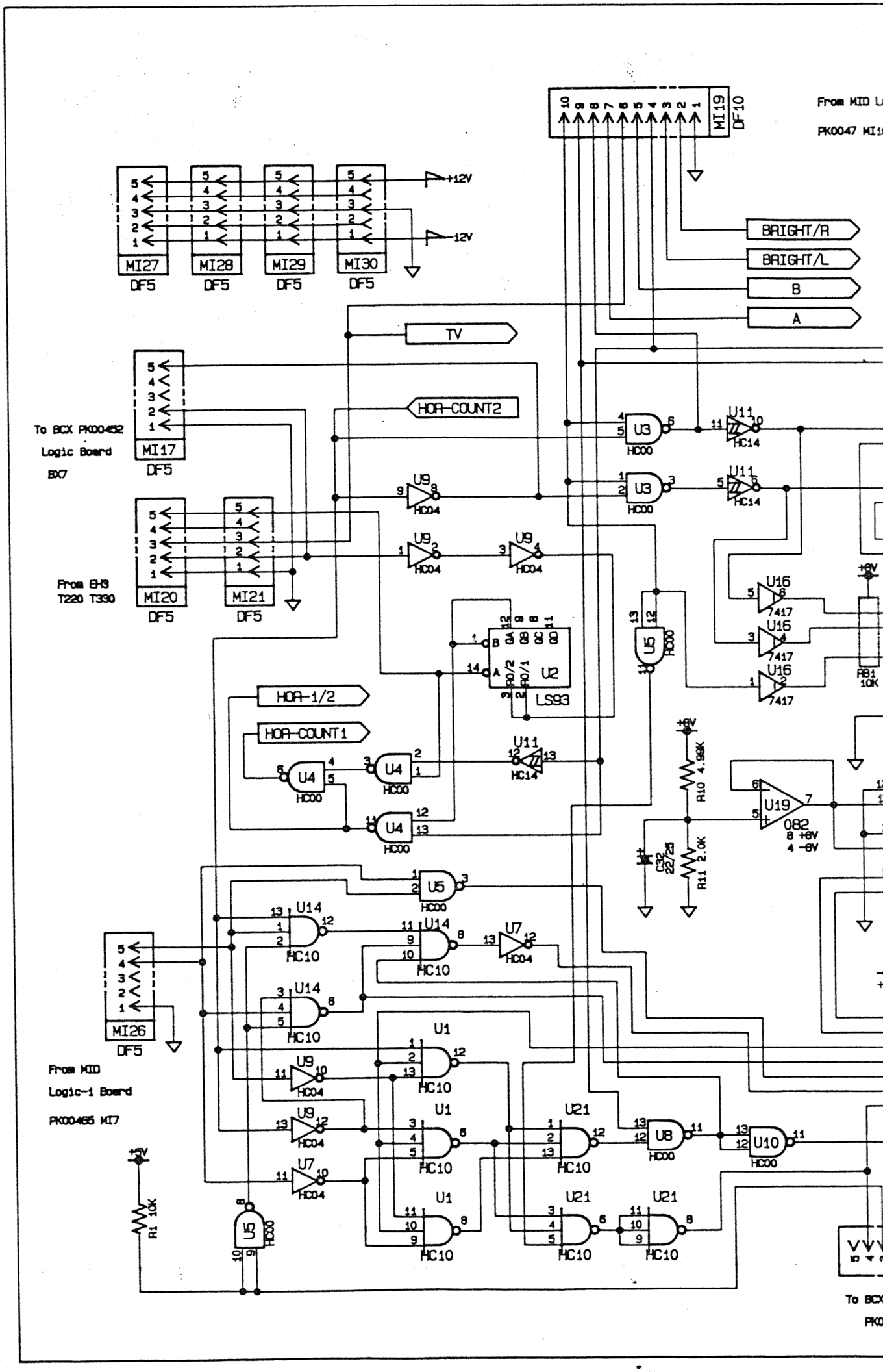
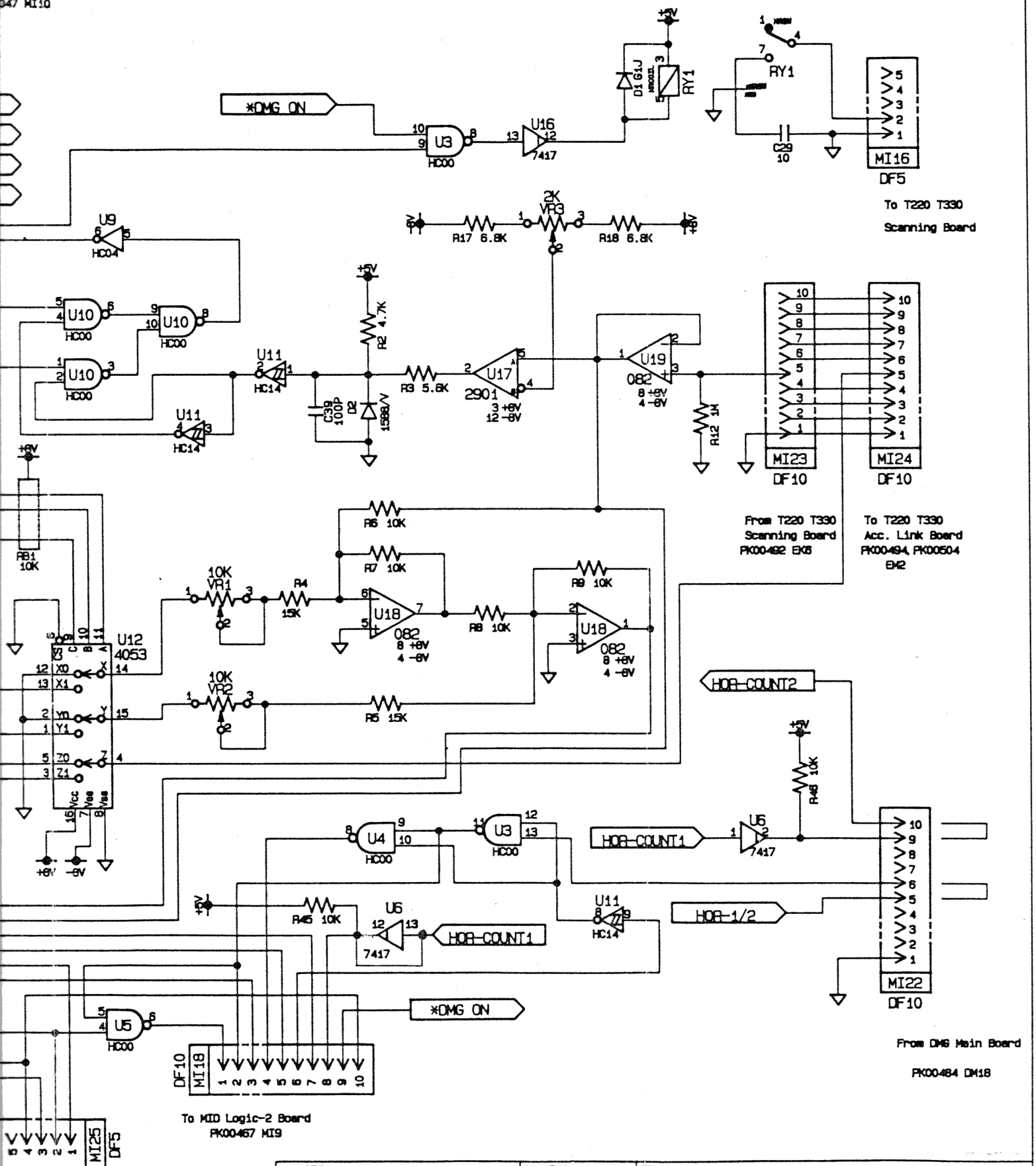

MI19 DF10
From MID L
PK0047 MI1
MI27 DF5
MI28 DF5
MI29 DF5
MI30 DF5
+12V
-12V
BRIGHT/R
BRIGHT/L
B
A
TV
HOR-COUNT2
To BCX PK00452
Logic Board
BX7
MI17 DF5
U3 HC00
U11 HC14
U9 HC04
MI20 DF5
MI21 DF5
From EHS
T220 T330
U16 7417
RB1 10K
U2 LS93
U5 HC00
HOR-1/2
HOR-COUNT1
U4 HC00
R10 4.99K
U19 082
8 +8V
4 -8V
C32 22/25
R11 2.0K
U14 HC10
U7 HC04
MI26 DF5
From MID
Logic-1 Board
PK00465 MI7
U1 HC10
U21 HC10
U8 HC00
U10 HC00
+5V
R1 10K
To BCX
PK0



NOTES 1.TS682104- 86/11/12	DRAWING S.SUZAKI	TITLE Video Control Board	
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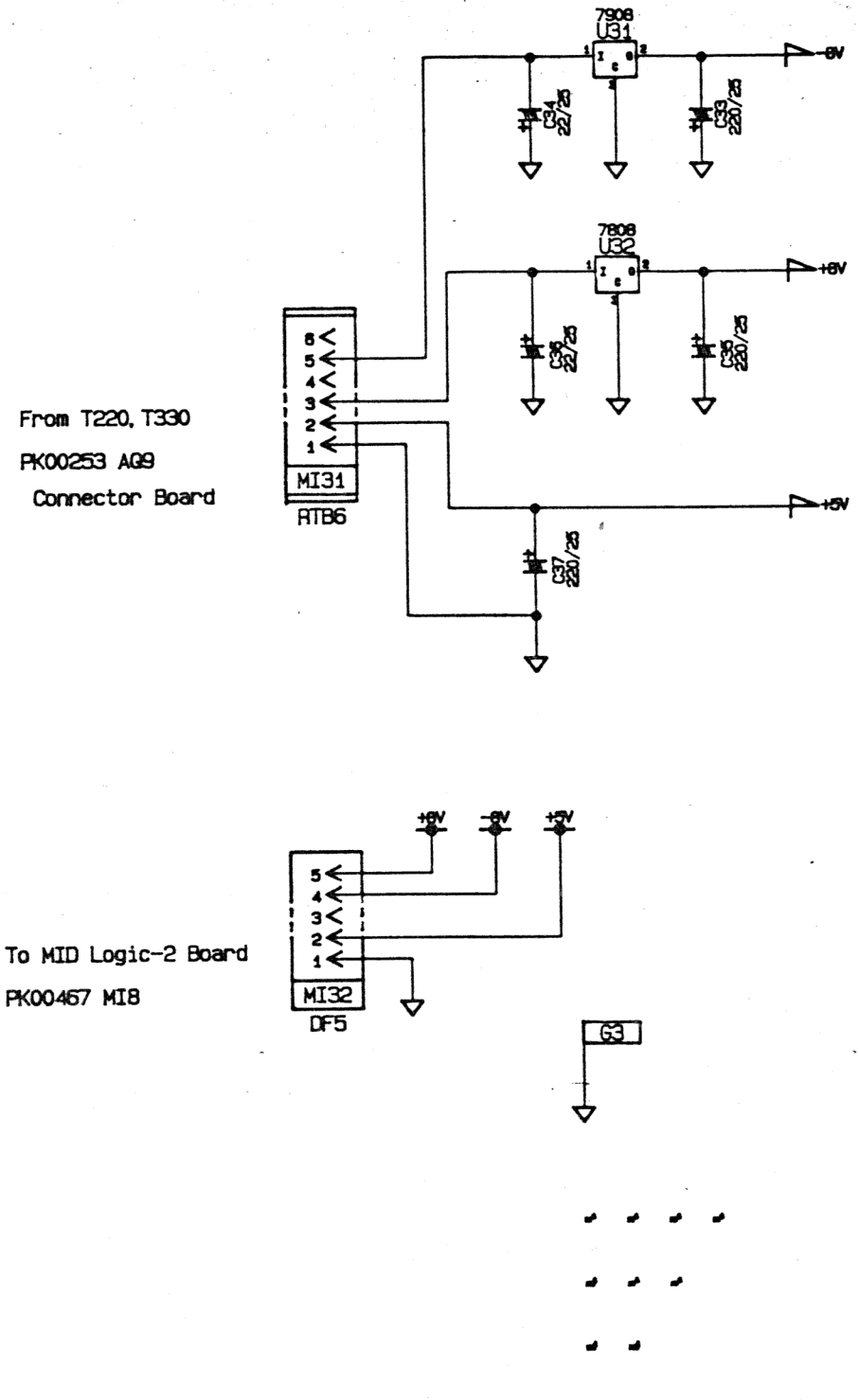
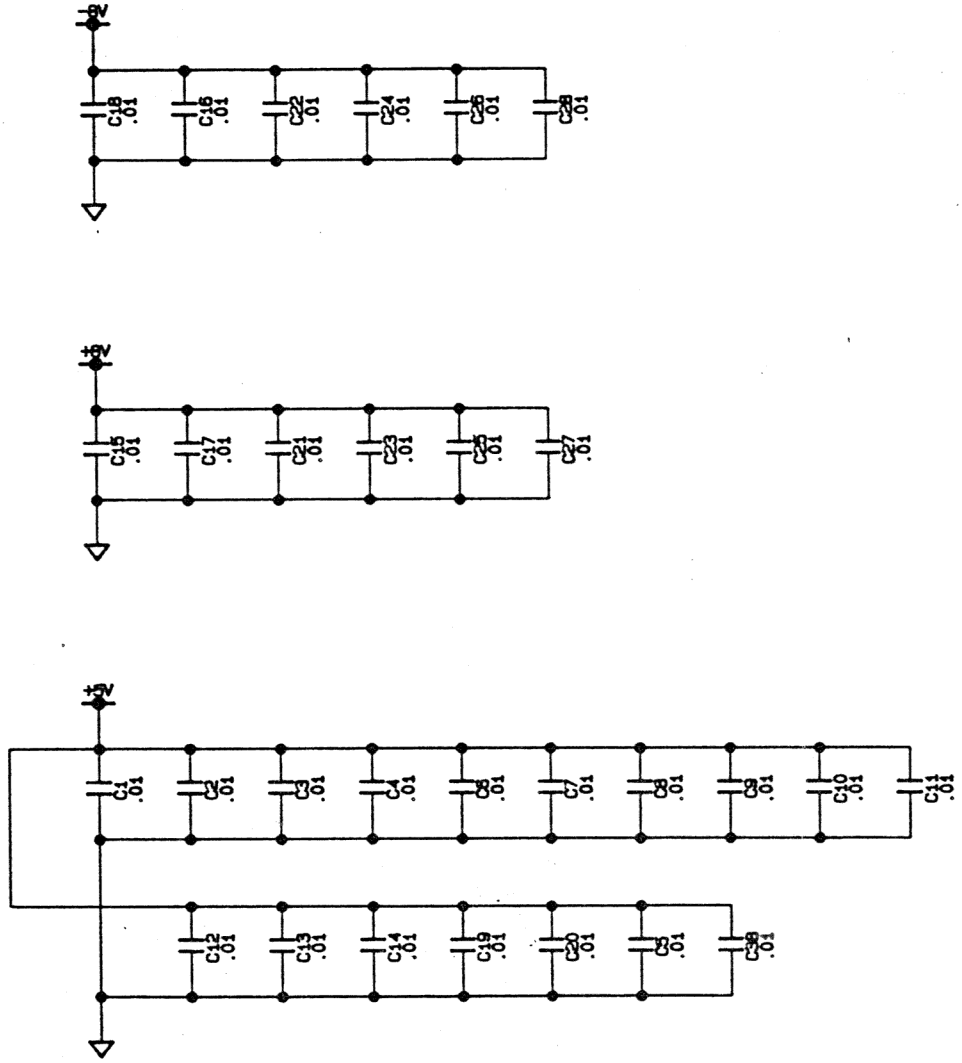

7908
U31
-8V
C34
22/25
C33
220/25
7808
U32
+8V
C36
22/25
C35
220/25
+5V
C37
220/25
From T220, T330
PK00253 AG9
Connector Board
6
5
4
3
2
1
MI31
RTB6
+8V
-8V
+5V
5
4
3
2
1
MI32
DF5
To MID Logic-2 Board
PK00467 MI8
G3



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